

1. (once amended) A curable coating composition comprising:

at least one terminally ethylenically unsaturated oligomer comprising a polyol soft block having a number average molecular weight of more than about 4000 Daltons;

the composition further comprising at least one ethylenically unsaturated reactive monomer,

wherein said composition when cured has a tensile strength of at least about 0.85 MPa and a Young's Modulus of less than about 1.3 MPa.

2. (once amended) The coating composition of claim 1, wherein said polyol soft block has a number average molecular weight of at least about 8000 Daltons.

3. (once amended) The coating composition of claim 1, wherein said polyol soft block comprises at least one moiety of polypropylene glycol having a number average molecular weight of at least about 4000 Daltons.

4. (once amended) The coating composition of claim 1, wherein said oligomer comprises:

HEA~H12MDI~PPG₄₀₀₀~H12MDI~HEA, where PPG₄₀₀₀ comprises a polypropylene glycol having a number average molecular weight of approximately 4000 Daltons and a molecular weight distribution of less than about 1.1, H12MDI comprises 4,4'-methylenebis(cyclohexylisocyanate), and HEA comprises 2-hydroxyethyl acrylate.

5. (once amended) The coating composition of claim 1, wherein said oligomer comprises:

HEA~H12MDI~PPG₄₀₀₀~H12MDI~PPG₄₀₀₀~H12MDI~HEA, where PPG₄₀₀₀ comprises a polypropylene glycol having a number average molecular weight of approximately 4000 Daltons and a molecular weight distribution of less than about 1.1; H12MDI comprises 4,4'-methylenebis(cyclohexylisocyanate), and HEA comprises 2-hydroxyethyl acrylate.

6. (once amended) The coating composition of claim 1, wherein said oligomer comprises:

HEA~(IPDI~PPG₂₀₀₀~IPDI)~T₂₀₀₀~(IPDI~PPG₂₀₀₀~IPDI)~HEA, where HEA comprises hydroxyethyl acrylate, IPDI comprises isophorone diisocyanate, PPG₂₀₀₀ comprises poly(propylene glycol) with a M_n of about 2000 Daltons and T₂₀₀₀ comprises poly(tetramethylene glycol) with a M_n of about 2000 Daltons.

12. (once amended) The coating composition of claim 1, wherein said monomer is selected from the group consisting of propylene oxide acrylates, n-propylene oxide acrylates, iso-propylene oxide acrylates, substituted iso-propylene oxide acrylates, substituted alkoxy alkyl alkenes, propylene oxide ethoxylated oxides, and combinations thereof.

13. (once amended) The coating composition of claim 1, wherein said composition when cured has a Young's Modulus of about 1.28 MPa or less and a tensile strength of at least about 1 MPa.

14. (once amended) The coating composition of claim 13, wherein said composition when cured has a Young's Modulus of about 1.25 MPa or less.

15. (once amended) The coating composition of claim 13, wherein said composition when cured has a Young's Modulus of about 1 MPa or less.

16. (once amended) The coating composition of claim 13, wherein said composition when cured has a tensile strength of at least about 1.5 MPa.

17. (once amended) The coating composition of claim 13, wherein said composition when cured has a tensile strength of at least about 1.75 MPa.

18. (once amended) The coating composition of claim 13, wherein said composition before curing has a viscosity at 25° C of less than about 80 Poise.

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Amended

19. (once amended) The coating composition of claim 14, wherein said composition before curing has a viscosity at 25° C of less than about 50 Poise.

21. (once amended) The composition of claim 1, further comprising at least one of an adhesion promoter, reactive diluent, antioxidant, catalyst, stabilizer, property-enhancing additive, wax, lubricant, or slip agent.

22. (once amended) A coated optical fiber comprising an optical fiber having a primary coating layer thereon, the primary coating layer comprising the polymerized product of a curable coating composition comprising

at least one terminally ethylenically unsaturated oligomer comprising a polyol soft block having a number average molecular weight of more than about 4000 Daltons,

the composition further comprising at least one ethylenically unsaturated reactive monomer,

wherein said primary coating layer has a tensile strength of at least about 0.85 MPa and a Young's Modulus of less than about 1.3 MPa.

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23. (once amended) The coated fiber of claim 22, wherein said polyol soft block has a number average molecular weight of at least about 8000 Daltons.

24. (once amended) The coated fiber of claim 22, wherein said polyol soft block comprises at least one moiety of polypropylene glycol having a number average molecular weight of at least about 4000 Daltons.

25. (once amended) The coated fiber of claim 22, wherein said oligomer comprises:

HEA~H12MDI~PPG₄₀₀₀~H12MDI~HEA, where PPG₄₀₀₀ comprises a

polypropylene glycol having a number average molecular weight of approximately 4000 Daltons and a molecular weight distribution of less than about 1.1, H12MDI comprises 4,4'-

methylenebis(cyclohexylisocyanate), and HEA comprises 2-hydroxyethyl

acrylate.

26. (once amended) The coated fiber of claim 22, wherein said oligomer comprises:

HEA~H12MDI~PPG₄₀₀₀~H12MDI~PPG₄₀₀₀~H12MDI~HEA,

where PPG₄₀₀₀ is a polypropylene glycol having a molecular weight of approximately 4000 Daltons and a molecular weight distribution of less than about 1.1, H12MDI is 4,4'-methylenebis(cyclohexylisocyanate), and HEA is 2-hydroxyethyl acrylate.

27. (once amended) The coated fiber of claim 22, wherein said oligomer comprises:

HEA~(IPDI~PPG₂₀₀₀~IPDI)~T₂₀₀₀~(IPDI~PPG₂₀₀₀~IPDI)~HEA, where HEA

comprises hydroxyethyl acrylate, IPDI comprises isophorone diisocyanate, PPG₂₀₀₀ comprises poly(propylene glycol) with a M_n of about 2000 Daltons and T₂₀₀₀ comprises poly(tetramethylene glycol) with a M_n of about 2000 Daltons.

32. (once amended) The coated fiber of claim 31, wherein the curable coating composition further comprising a monomer having a branched polyoxyalkylene chain.

34. (once amended) The coated fiber of claim 22, wherein said primary coating layer has a Young's Modulus of about 1.28 MPa or less and a tensile strength of at least about 1 MPa.

35. (once amended) The coated fiber of claim 22, wherein said primary coating layer has a Young's Modulus of about 1.25 MPa or less.

36. (once amended) The coated fiber of claim 22, wherein said primary coating layer has a Young's Modulus of about 1 MPa or less.

37. (once amended) The coated fiber of claim 22, wherein said primary coating layer has a tensile strength of at least about 1.5 MPa.

38. (once amended) The coated fiber of claim 22, wherein said primary coating layer has a tensile strength of at least about 1.75 MPa.

39. (once amended) A method for making a coated optical fiber, comprising the steps of:

providing an optical fiber;

coating the optical fiber with a polymerizable composition comprising at least one terminally ethylenically unsaturated oligomer comprising a polyol soft block having a number average molecular weight of more than about 4000 Daltons, the composition further comprising at least one ethylenically unsaturated reactive monomer; and
polymerizing the composition under conditions effective to form a primary coating over the optical fiber,

wherein said primary coating has a tensile strength of at least about 0.85 MPa and a Young's Modulus of less than about 1.3 MPa.

40. (once amended) The method of claim 39, further comprising the step of coating the optical fiber with a secondary polymerizable composition over said primary coating.

43. (once amended) The coating composition of claim 1, wherein said polyol soft block comprises a polyol having a molecular weight distribution of less than about 1.1.

44. (once amended) The coating composition of claim 1, wherein said composition before curing has a viscosity at 25° C of less than about 970 centiPoise.

46. (once amended) A curable coating composition comprising:

at least one oligomer comprising a polyol soft block having a number average molecular weight of more than about 4000 Daltons wherein said oligomer comprises at least one of the oligomers selected from HEA-H12MDI-PPG₄₀₀₀-H12MDI-HEA; HEA-H12MDI-PPG₄₀₀₀-H12MDI-PPG₄₀₀₀-H12MDI-HEA; HEA-(IPDI-PPG₂₀₀₀-IPDI)-T₂₀₀₀-(IPDI-PPG₂₀₀₀-IPDI)-HEA; HEA-(IPDI-T₂₀₀₀-IPDI)-PPG₂₀₀₀-(IPDI-T₂₀₀₀-IPDI)-HEA; HEA-(IPDI-PPG₂₀₀₀-IPDI)-BD-(IPDI-PPG₂₀₀₀-IPDI)-HEA; HEA-(IPDI-BD-IPDI)-PPG₂₀₀₀-(IPDI-BD-IPDI)-HEA; HEA-(IPDI-EG₄-IPDI)-PPG₂₀₀₀-(IPDI-EG₄-IPDI)-HEA; HEA-H12MDI-PPG₈₀₀₀-H12MDI-HEA; and combinations thereof, wherein HEA comprises a hydroxyethyl acrylate capping group, IPDI comprises isophorone diisocyanate, PPG₂₀₀₀ comprises a poly(propylene glycol) with a M_n= 2000, T₂₀₀₀ comprises a

poly(tetramethylene glycol) with a $M_n = 2000$, BD comprises a butanediol, EG₄ comprises a tetraethylene glycol, and PPG₄₀₀₀ comprises a poly(propylene glycol) with a $M_n = 4000$, and H12MDI comprises 4,4'-methylenebis(cyclohexylisocyanate),

the composition further comprising at least one ethylenically unsaturated reactive monomer,

wherein said composition when cured has a tensile strength of at least about 0.85 MPa and a Young's Modulus of less than about 1.3 MPa.
